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10/711,139	08/27/2004	Chi-Cheng Ju	MTKP0082USA	5138

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EXAMINER
FINDLEY, CHRISTOPHER G

ART UNIT	PAPER NUMBER
2621	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *8/27/2004*.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   **Claims 1-25 are rejected under 35 U.S.C. 102(b) as being anticipated by**

Diaz et al. (US 5812789 A).

Re claim 1, Diaz discloses a video signal processing system for encoding an

encoding bit stream according to characteristics of a decoding bit stream, the encoding

and decoding bit streams include a plurality of encoding schemes, the video signal

processing system comprising: a storage device utilized for storing data of the decoding

bit stream and the encoding bit stream (Diaz: Fig. 2, memory 50); and an encoder

electrically connected to the storage device for encoding the encoding bit stream

according to an encoding scheme of the decoding bit stream (Diaz: Fig. 2, encoder 46),

the memory bandwidth needed for a third encoding scheme out of the plurality of

encoding schemes being greater than the memory bandwidth needed for any other

encoding scheme out of the plurality of encoding schemes (Diaz: column 3, lines 26-39,

some images are decoded based on previous images (P frames) and some images are

decoded based previous and future images (B frames), wherein more memory

bandwidth would be required for accessing two images as opposed to just one image),

the encoder encoding the encoding bit stream using one of the plurality of encoding

schemes except the third encoding scheme when the encoding scheme of the decoding

bit stream is the third encoding scheme (Diaz: column 3, lines 26-39, B frames may be

dropped to reduce the bandwidth being used).

Re claim 2, Diaz discloses that the plurality of encoding schemes include three

encoding schemes, and in addition to the third encoding scheme, the three encoding

schemes further include a first encoding scheme and a second encoding scheme (Diaz:

column 7, lines 16-22).

Re claim 3, Diaz disclo0ses that the memory bandwidth needed for the first

encoding scheme is less than the memory bandwidth needed for the second encoding

scheme, and the memory bandwidth needed for the second encoding scheme is less

than the memory bandwidth needed for the third encoding scheme (Diaz: column 7,

lines 16-22, intra coded images (I frames) do not require access to the stored images,

so they use no memory bandwidth; column 3, lines 26-39, some images are decoded

based on previous images (P frames) and some images are decoded based previous

and future images (B frames), wherein more memory bandwidth would be required for

accessing two images as opposed to just one image).

Re claim 4, Diaz discloses that the first, second, and third encoding schemes are

the intra encoding, the predictive encoding, and the bidirectionally predictive encoding,

respectively (Diaz: column 7, lines 16-22).

Re claim 5, Diaz discloses that when the encoding scheme of the decoding bit

stream is the intra encoding, the encoding scheme of the encoding bit stream is one of

the intra encoding, the predictive encoding, and the bidirectionally predictive encoding (Diaz: column 8, lines 19-29, MPEG inherently utilizes one of intra, predicted, or bidirectionally predicted coding modes).

Re claim 6, Diaz discloses that when the encoding scheme of the decoding bit stream is the predictive encoding, the encoding scheme of the encoding bit stream is one of the intra encoding, and the predictive encoding (Diaz: column 8, lines 19-29, MPEG inherently utilizes one of intra, predicted, or bidirectionally predicted coding modes; column 3, lines 26-39, dropping frames to reduce required memory bandwidth).

Re claim 7, Diaz discloses that when the encoding scheme of the decoding bit stream is the bidirectionally predictive encoding, the encoding scheme of the encoding bit stream is the intra encoding (Diaz: column 8, lines 19-29, MPEG inherently utilizes one of intra, predicted, or bidirectionally predicted coding modes; column 3, lines 26-39, dropping frames to reduce required memory bandwidth).

Re claim 8, Diaz discloses that the storage device is a memory (Diaz: Fig. 2, memory 50), and the video signal processing system further comprises a memory interface for controlling access to the memory (Diaz: Fig. 2, memory interface 48).

Re claim 9, Diaz discloses a decoder electrically connected to the storage device for decoding the decoding bit stream (Diaz: Fig. 2, decoder 44) and sending the encoding scheme of the decoding bit stream to the encoder (Diaz: column 8, lines 19-29, the decoder/encoder is capable of utilizing multiple coding standards; column 6,

lines 32-38, the type of coding standard factors into bandwidth calculations; column 6, lines 12-13, the DMA engine may be an integrated part of the decoder/encoder).

Re claim 10, Diaz discloses a video signal encoding and decoding method for encoding an encoding bit stream according to characteristics of a decoding bit stream, the encoding and decoding bit streams include a plurality of encoding schemes, the video signal encoding and decoding method comprising: (a) checking an encoding scheme of the decoding bit stream to decide an encoding scheme for encoding the encoding bit stream (Diaz: column 8, lines 19-29, the decoder/encoder is capable of utilizing multiple coding standards; column 6, lines 32-38, the type of coding standard factors into bandwidth calculations; column 6, lines 12-13, the DMA engine may be an integrated part of the decoder/encoder); and (b) encoding the encoding bit stream using one of the plurality of encoding schemes except a third encoding scheme when the encoding scheme of the decoding bit stream is the third encoding scheme, the memory bandwidth needed for the third encoding scheme being greater than the memory bandwidth needed for any other encoding scheme out of the plurality of encoding schemes (Diaz: column 7, lines 16-22, intra coded images (I frames) do not require access to the stored images, so they use no memory bandwidth; column 3, lines 26-39, some images are decoded based on previous images (P frames) and some images are decoded based previous and future images (B frames), wherein more memory bandwidth would be required for accessing two images as opposed to just one image).

Claim 11 has been analyzed and rejected with respect to claim 2 above.

Claim 12 has been analyzed and rejected with respect to claim 3 above.

Claim 13 has been analyzed and rejected with respect to claim 4 above.

Claim 14 has been analyzed and rejected with respect to claim 5 above.

Claim 15 has been analyzed and rejected with respect to claim 6 above.

Claim 16 has been analyzed and rejected with respect to claim 7 above.

Re claim 17, Diaz discloses that the decoding bit stream and the encoding bit stream are both accessed through the same memory interface circuit corresponding to a memory (Diaz: Fig. 2, decoder 44 and encoder 46 are both connected to memory 50 via the memory interface 48 and the DMA engine 52).

Re claim 18, Diaz discloses that the encoding bit stream is an encoding bit stream corresponding to a picture (Diaz: Fig. 2, video decoding circuit 12 and video encoding circuit 62 process video data, which corresponds to sequences of pictures).

Re claim 19, Diaz discloses that the encoding bit stream is an encoding bit stream corresponding to a block of a picture (Diaz: column 8, lines 19-29, MPEG inherently provides for processing video in blocks of pixels).

Re claim 20, Diaz discloses that the block is a macroblock (Diaz: column 8, lines 19-29, MPEG inherently provides for processing video in macroblocks of 16X16 pixels).

Claim 21 has been analyzed and rejected with respect to claim 5 above.

Re claim 22, Diaz discloses encoding the block according to the intra encoding

when the encoding scheme of the picture is the intra encoding (Diaz: column 8, lines

19-29, MPEG inherently utilizes one of intra, predicted, or bidirectionally predicted

coding modes).

Re claim 23, Diaz discloses encoding the block according to one of the intra

encoding and the forward motion compensation encoding when the encoding scheme of

the picture is the predictive encoding (Diaz: column 8, lines 19-29, MPEG inherently

utilizes one of intra, predicted, or bidirectionally predicted coding modes).

Re claim 24, Diaz discloses encoding the block according to one of the intra

encoding, the forward motion compensation encoding, the backward motion

compensation encoding, and the bidirectional motion compensation encoding when the

encoding scheme of the picture is the bidirectionally predictive encoding (Diaz: column

8, lines 19-29, MPEG inherently utilizes one of intra, predicted, or bidirectionally

predicted coding modes).

Re claim 25, Diaz discloses encoding the block according to one of the forward

motion compensation encoding, the backward motion compensation encoding, and the

bidirectional motion compensation encoding when the encoding scheme of the picture is

the bidirectionally predictive encoding (Diaz: column 8, lines 19-29, MPEG inherently

utilizes one of intra, predicted, or bidirectionally predicted coding modes).

Conclusion

3.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure:

a.   Memory management for an MPEG2 compliant decoder; Cheney et al.

(US 5668599 A)

b.   Methods and apparatus for processing luminance and chrominance image

data; Pearlstein et al. (US 6385248 B1)

c.   System and method for adaptive video processing with coordinated

resource allocation; Rodriguez et al. (US 20020009149 A1)

d.   Recording apparatus and coding apparatus; Fukuda et al. (US 6856759

B1)

e.   Moving image encoding method and apparatus, and moving image

decoding method and apparatus; Kato (US 6415055 B1)

Contact

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to CHRISTOPHER FINDLEY whose telephone number is

(571)270-1199. The examiner can normally be reached on Monday-Friday 8:30am-

5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax

phone number for the organization where this application or proceeding is assigned is

571-273-8300.

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher Findley/

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